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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Peter Asberg

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EXAMINER

YANG, NELSON C

ART UNIT

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1641

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,893	Applicant(s) ASBERG ET AL.	
	Examiner Nelson Yang	Art Unit 1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 39-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/22/06</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group II, claims 39-48 in the reply filed on March 18, 2009 is acknowledged.

Response to Amendment

2. Applicant's cancellation of claims 25-38 is acknowledged and has been entered.
3. Claims 39-48 are currently pending and under examination.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 45, 47, and 48, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 45 recites the limitation "said receptor molecules" in the second line. There is insufficient antecedent basis for this limitation in the claim.

7. With respect to claims 47-48, the claim limitation "means for detecting said detectable property" is a means plus function that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to clearly link or associate the disclosed structure, material, or acts to the claimed function such that one of ordinary skill in the art would recognize what structure or

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material perform the claimed function. In particular, it is unclear what structure, material, or act would perform the function of detecting said detectable property. Applicant is required to:

- a) amend the claim so that the claim limitation will no longer be a means plus function limitation under 35 U.S.C. 112, sixth paragraph; or
- b) amend the written description of the specification such that it expressly recites the corresponding structure, material, or acts that perform the claimed function and clearly links or associates the structure, material or acts to the claimed function, without introducing any new matter (35 U.S.C. 132(a)); or
- c) state on the record what the corresponding structure, material, or acts, which are implicitly or inherently set forth in the written description of the specification, perform the claimed function.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 39-48 rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. [US 2002/0150759] in view of Wohlstadter et al. [US 2001/0021534].

With respect to claim 39, Jones et al. teach the invention as substantially claimed (see entire patent). In particular, Jones et al. teach fluorescent polyelectrolytes including conjugated and J-aggregate polymers for biosensing applications (para. 0042, 0043), wherein the fluorescent

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polymers and a receptor are tethered to a support (para. 0014). Jones et al. fail to teach that the support is a patterned substrate having hydrophilic and hydrophobic areas.

Wohlstadter et al., however, teach a multispecific binding surface comprising binding domains that are hydrophobic or hydrophilic and the surrounding surfaces having the opposite property than the binding domains in order to minimize spreading of binding reagents or analytes from the binding domains (para. 0039).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention for the support of Jones et al. to comprise patterned hydrophilic and hydrophobic regions, wherein the fluorescent polymers and reporters are tethered to selected areas, as suggested by Wohlstadter et al., as this would minimize spreading of binding reagents or analytes, allowing for more accurate assay results.

10. With respect to claims 40, 41, Jones et al. teach fluorescent polyelectrolytes including conjugated and J-aggregate polymers for biosensing applications (para. 0042, 0043).

11. With respect to claim 42, Jones et al. teach QTL conjugates comprising biomolecules (para. 0043, 0044) that interact with the fluorescent polymers (para. 0043).

12. With respect to claim 43, Jones et al. teach that the support may be a glass slide (para. 0064).

13. With respect to claim 44, Jones et al. teach fluorescent polyelectrolytes including conjugated and J-aggregate polymers for biosensing applications (para. 0042, 0043), wherein the fluorescent polymers and a receptor are tethered to a support (para. 0014), and wherein the receptor binds to a target biological agent in a sample (abstract), thus forming a complex.

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14. With respect to claim 45, Jones et al. teach receptors such as proteins (para. 0072).
15. With respect to claim 46, Jones et al. teach target agents may comprise proteins and viruses (para. 0065).
16. With respect to claims 47, 48, Jones et al. teach a microtiter plate (para. 0064), which would constitute a plurality of receptacles, and measuring the fluorescence intensity of the sample (para. 0067), which would inherently involve a means for detecting a detectable property.

Double Patenting

17. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

18. Claims 39-42, 46-48 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 17-32, of copending Application No. 11/579741 [US 2008/0038751 in view of Wohlstadter et al. [US 2001/0021534]. In particular, the copending application recites a device comprising a surface with an immobilized

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polyelectrolyte and means for measuring at least one property of the conjugated polyelectrolyte (claims 25, 30), wherein the property may be fluorescence (claim 31), and the polyelectrolyte acts as a direct probe for a protein (claim 17). The copending applications further recite that the surface may comprise a solid support such as a microtiter plate or flow cell (claims 25-26). The copending application fails to recite the limitation the surface is a patterned substrate having hydrophobic and hydrophilic areas.

Wohlstadter et al., however, teach a multispecific binding surface comprising binding domains that are hydrophobic or hydrophilic and the surrounding surfaces having the opposite property than the binding domains in order to minimize spreading of binding reagents or analytes from the binding domains (para. 0039).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention for the support of copending application to comprise patterned hydrophilic and hydrophobic regions, wherein the fluorescent polymers and reporters are tethered to selected areas, as suggested by Wohlstadter et al., as this would minimize spreading of binding reagents or analytes, allowing for more accurate assay results.

This is a provisional obviousness-type double patenting rejection.

19. Claims 39, 40, 44, 47-48, are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 13-15 of copending Application No. 10/514,191 [US 2006/0175193] in view of Wohlstadter et al. [US 2001/0021534]. In particular, the copending application recites a complex comprising a conjugated polyelectrolyte and one or more receptor molecules specific for a target biomolecule analyte immobilized on the surface of a receptacle such as a flow cell (claims 1, 13-15). The

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compending application fails to recite the limitation the surface is a patterned substrate having hydrophobic and hydrophilic areas.

Wohlstadter et al., however, teach a multispecific binding surface comprising binding domains that are hydrophobic or hydrophilic and the surrounding surfaces having the opposite property than the binding domains in order to minimize spreading of binding reagents or analytes from the binding domains (para. 0039).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention for the support of compending application to comprise patterned hydrophilic and hydrophobic regions, wherein the fluorescent polymers and reporters are tethered to selected areas, as suggested by Wohlstadter et al., as this would minimize spreading of binding reagents or analytes, allowing for more accurate assay results.

This is a provisional obviousness-type double patenting rejection.

Conclusion

20. No claims are allowed.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson Yang whose telephone number is (571)272-0826. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Shibuya can be reached on (571)272-0806. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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22. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nelson Yang/

Primary Examiner, Art Unit 1641